The Harman Kardon Model hk 770

Power Amplifier

Technical Manual

harman/kardon

ALIGNMENT PROCEDURES

DC VOLTAGE BALANCE ADJUSTMENT

INSTRUMENT: DC VTVM

NOTE: Press in speaker system 1 push button to ON (button in) position.

STEP	CONNECT OUTPUT METER TO	ADJUST	ADJUST FOR
1	DC VTVM to L ch terminal of speaker system 1.	VR402	OV ± 10mV
2	DC VTVM to R ch terminal of speaker system 1.	VR401	Same as above

IDLING CURRENT ADJUSTMENT (MUST BE MADE AFTER ¼ HOUR WARM UP. NO SIGNAL INPUT, NO LOAD.)

INSTRUMENTS: Use two DC VTVM — (VTVM I and II)

STEP	CONNECT OUTPUT METER TO	ADJUST	ADJUST FOR
1	DC VTVM I to TP1 (+) and TP3 (−), and DC VTVM II to TP2 (+) and TP3 (−)	VR404	24mV ± 10% at total voltage
2	DC VTVM I to TP4 (+) and TP6 (−), and DC VTVM II to TP5 (+) and TP6 (−)	VR403	Same as above

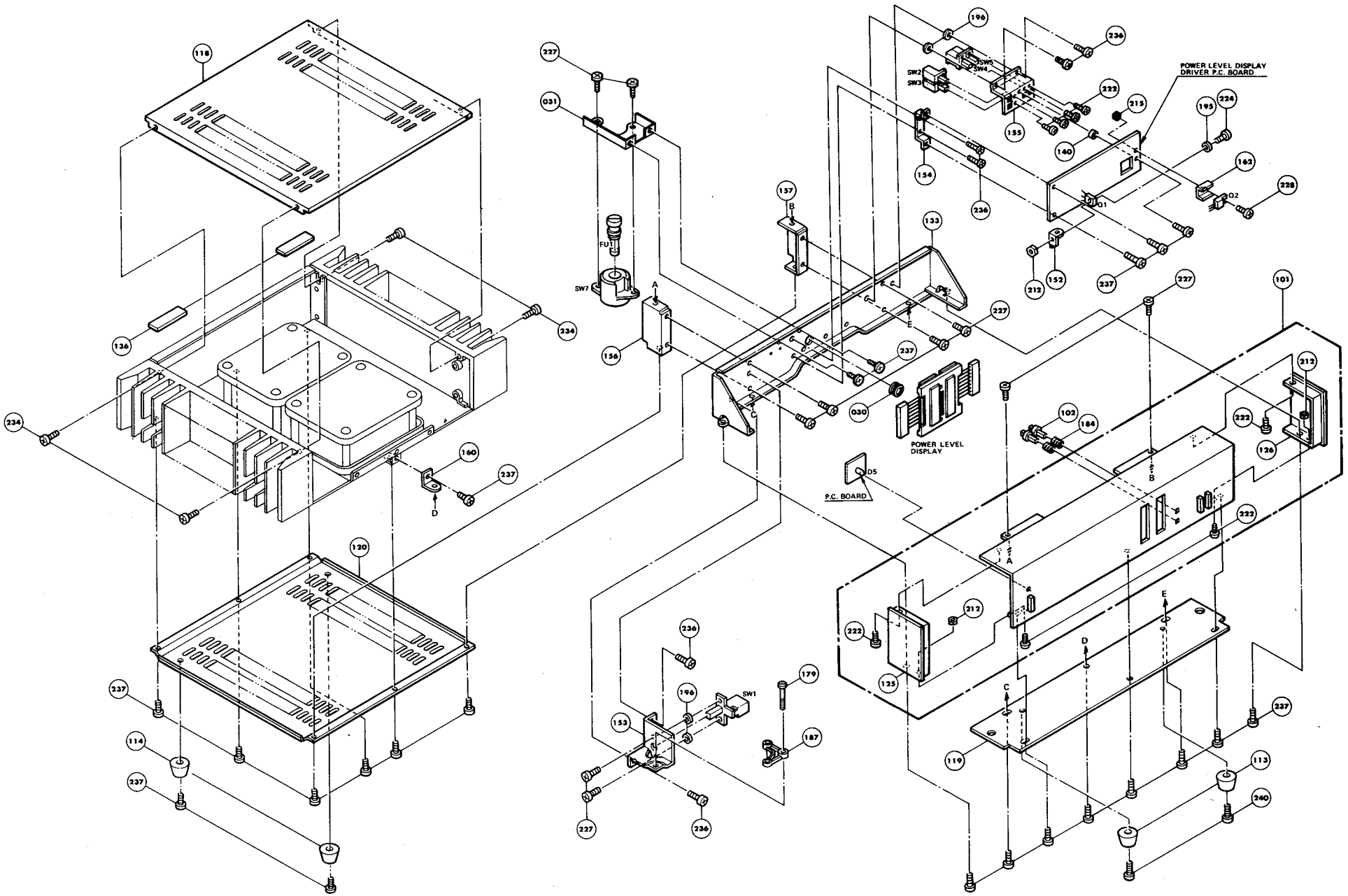
POWER LEVEL DISPLAY SENSITIVITY ADJUSTMENT

INSTRUMENT: Audio Signal Generator
AC VTVM

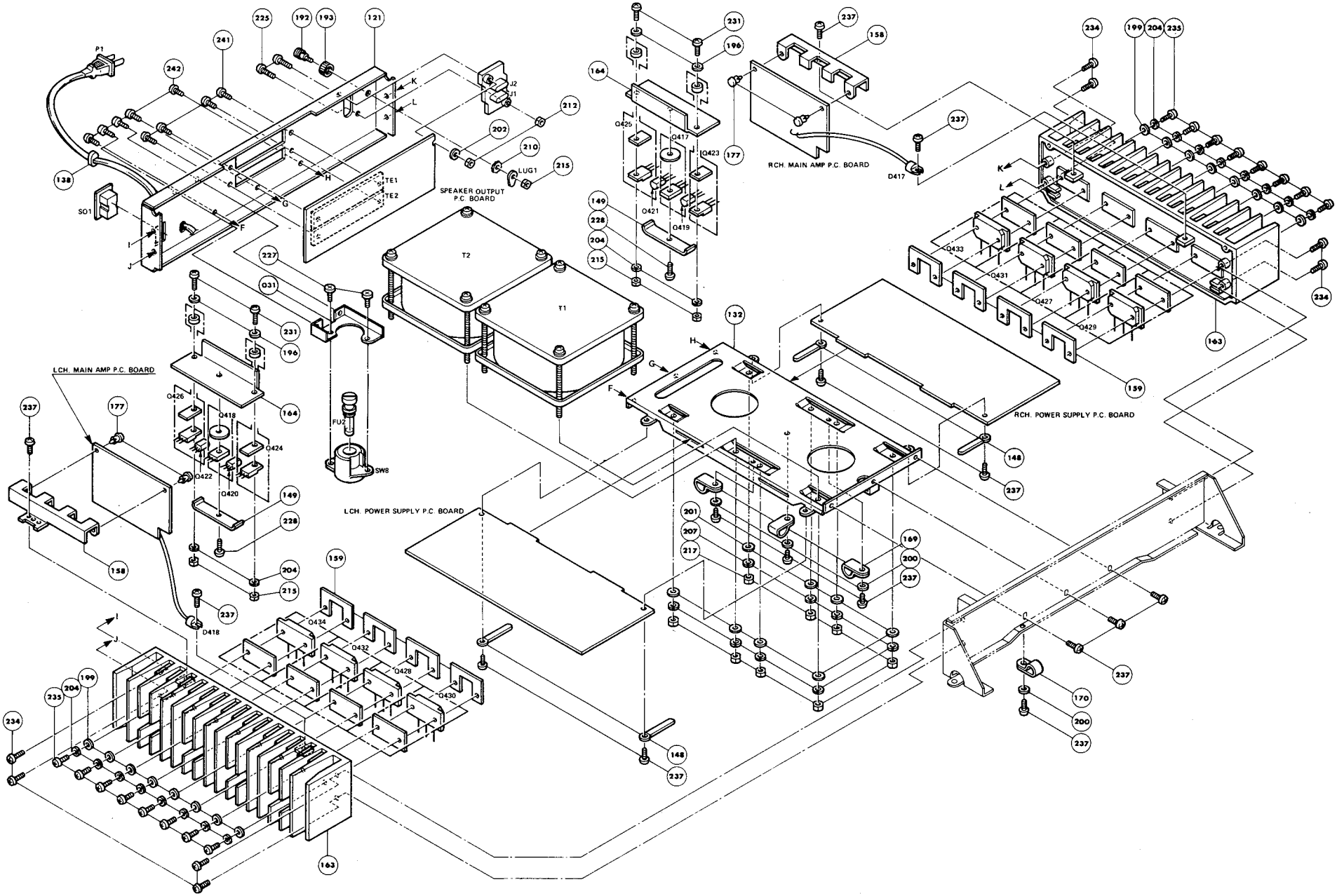
NOTE: Connect signal source to main amplifier input jacks.
Connect 4 ohm dummy load and AC VTVM to terminal of speaker system 1.
Press in display sensitivity push button to x0.1 (button in) position.
Press in speaker system 1 push button to ON (button in) position.

STEP	SIGNAL SOURCE	OUTPUT INDICATOR	ADJUST	ADJUST FOR
1	1kHz of audio signal generator	AC VTVM	Input level of audio signal generator	8.94V (20W)
2	1 dB decrease input level of audio signal generator	L ch. 200W LED of power level display	VR52	LED Light
3		R ch. 200W LED of power level display	VR51	

GENERAL UNIT EXPLODED VIEW



GENERAL UNIT EXPLODED VIEW



GENERAL UNIT PARTS LIST

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
AA	101	A443-HK770	Front Panel Assembly
AB	102	A662-HK770	Push Button Assembly, Display, Display Sensitivity
113	113	1319-7330	Foot, Gold (x2)
114	114	1319-7131	Foot, Black (x2)
118	118	1414-00801	Cabinet Top
119	119	1423-00101	Cabinet Bottom, Front
120	120	1424-00501	Cabinet Bottom, Rear
121	121	1424-02201	Cabinet Back
125	125	1562-00602	Left Panel, Front Panel
126	126	1562-00702	Right Panel, Front Panel
132	132	2211-7191	Chassis, Power Transformers (T1,2)
133	133	2211-7192	Chassis, Front
136	136	2111-11452	Felt, Cabinet Back (x2)
138	138	2114-415027	Bushing, AC Line Cord (P1)
140	140	2132-7016	Spacer, Power Level Display Driver P.C. Board Retaining
148	148	2218-7001	Holding Bracket, Lead Wire (x4)
149	149	2218-7023	Bracket, Heat Sink (164) (x2)
152	152	2219-7501	Bracket, Voltage Regulator Transistor (Q1)
153	153	2219-7513	Bracket, Power Switch (SW1)
154	154	2219-7514	Bracket, Power Level Display Driver P.C. Board Retaining
155	155	2219-7515	Bracket, Speakers and Display Switches (SW2,3,4,5)
156	156	2219-7516	Bracket, Chassis (133)
157	157	2219-7517	Bracket, Chassis (133)
158	158	2219-7518	Bracket, Main Amp. P.C. Board Mounting (x2)
159	159	2219-7528	Bracket, Main Heat Sink (163) (x8)
160	160	2219-7529	Bracket, Chassis (132)
162	162	2222-7081	Heat Sink, Voltage Regulator Transistor (Q2)
163	163	2222-7088	Heat Sink, Main (x2)
164	164	2222-7090	Heat Sink, Main Amp. P.C. Board (x2)
167	167	2224-7056	Insulator, Fuse Holder (FH1,2)
169	169	2240-7041	Holder, Lead Wire Settle (x2)
170	170	2240-7077	Holder, Lead Wire Settle (x2)
175	175	2240-7118	Protector, Fuse (FU1,2) (x2)
177	177	2459-3005511	Nylon Rivet (x4)
179	179	2601-402	Special Screw, Power Switch Actuate Lever (187)
184	184	2651-210186	Coil Spring, Display and Display Sensitivity Push Buttons
187	187	2672-7013	Lever, Power Switch Actuate
192	192	2310-7002	Special Screw, Ground Terminal
193	193	2440-7001	Special Nut, Ground Terminal
195	195	2411-26Z1	Flat Washer (2.8ø x 6.5ø x 0.5t)
196	196	2411-30Z1	Flat Washer (3.2ø x 7ø x 0.5t) (x8)
199	199	2411-3041	Flat Washer (3.2ø x 7ø x 0.5t) (x16)

- to be continued -

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
200	200	2411-40Z1	Flat Washer (4.3ø x 9ø x 0.8t) (x4)
201	201	2411-50Z1	Flat Washer (5.3ø x 10ø x 1t) (x8)
202	202	2402-0373	Nylon Washer (3.2ø x 6ø x 1.6t)
204	204	2412-3022	Spring Washer (3.1ø) (x20)
207	207	2412-5022	Spring Washer (5.1ø) (x8)
210	210	2414-302	Toothed Lock Washer (3.2ø)
212	212	2446-261Z9	Hexagon Nut (M2.6) (x5)
215	215	2446-301Z9	Hexagon Nut (M3) (x6)
217	217	2446-501Z9	Hexagon Nut (M5) (x8)
222	222	2327-260629	Screw (+) (2.6 x 6mm) (x8)
224	224	2327-260829	Screw (+) (2.6 x 8mm)
225	225	2327-262049	Screw (+) (2.6 x 20mm) (x2)
227	227	2327-300629	Screw (+) (3 x 6mm) (x8)
228	228	2327-300829	Screw (+) (3 x 8mm) (x3)
231	231	2327-301229	Screw (+) (3 x 12mm) (x4)
234	234	2327-301449	Screw (+) (3 x 14mm) (x12)
235	235	2327-302049	Screw (+) (3 x 20mm) (x16)
236	236	2347-300522	Self-Tapping Screw (+) (3 x 5mm) (x6)
237	237	2347-300822	Self-Tapping Screw (+) (3 x 8mm) (x37)
240	240	2347-301222	Self-Tapping Screw (+) (3 x 12mm) (x2)
241	241	2347-300841	Self-Tapping Screw (+) (3 x 8mm) (x4)
242	242	2347-300842	Self-Tapping Screw (+) (3 x 8mm) (x3)

ELECTRICAL PARTS LIST

MISCELLANEOUS

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
819		5623-S-5014BT	Power Level Display
771	T1,2	5584-701277	Power Transformer
801	SW1	4431-01017358	Push Switch, Power
803	SW2,3,4,5	4431-01027169	Push Switch, Display, Display Sensitivity Speaker System 1, Speaker System 2
809	FU1,2	5732-402031	Fuse, 4A 125V
808	FH1,2	4472-0125	Fuse Holder, FU1,2 (x2)
810	P1	4161-7187	AC Line Cord
813	SO1	4474-108	External AC Socket, Unswitched
816	J1,2	4482-7112	2-Pin Jack, Main Amplifier Input
825	J3,4	4163-71327	Connector with Lead Wire, 15-Pin Female
826	J401	4163-71627	Connector with Lead Wire, 4-Pin Female
824	J402	4163-71227	Connector with Lead Wire, 4-Pin Female
805	D5	5637-GL2PR1	Light Emitting Diode, GL2PR1 Power Indicator
828	C1	5352-1030952	Capacitor, 0.01MF ±20% AC125V Metalized Polyester
830	LUG1	4211-4	Lug
806		4551-7509	P.C. Board, Power Indicator

POWER LEVEL DISPLAY DRIVER P.C. BOARD

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All resistors 1/4W, ±5% Carbon unless otherwise noted)			
701	R11,12,25, 26,53,54, 69,70	5134-102J25P	1 k ohm
704	R13,23,24	5134-222J25P	2.2 k ohm
755	R15,67	5102-101579	100 ohm (±5% 1/4W Fuse)
707	R16,19, 55,56	5134-472J25P	4.7 k ohm
712	R17	5134-104J25P	100 k ohm
700	R18	5134-101J25P	100 ohm
699	R20	5134-470J25P	47 ohm
715	R28	5134-274J25P	270 k ohm
763	R51,52	5134-473J25P	47 k ohm
762	R57,58,61, 62,63,64, 65,66	5134-103J25P	10 k ohm
754	R59,60,68	5176-152582	1.5 k ohm (±5% 1/2W Metal)
764	R71	5134-391J25P	390 ohm
751	VR51,52	5101-2238375	Variable Resistor, 22 k ohm
CAPACITORS			
694	C21	5345-106-25	10MF +50%-10% 25V Electrolytic
695	C22	5345-336-10	33MF +50%-10% 10V Electrolytic
697	C23	5361-102KB	1000PF ±10% 50V Ceramic
698	C26	5361-223ZF	0.022MF +80%-20% 50V Ceramic
756	C51,52	5345-105F0951	1MF ±20% 50V Electrolytic
753	C53,54	5361-222KB	2200PF ±10% 50V Ceramic
752	C55	5361-473ZF	0.047MF +80%-20% 50V Ceramic
SEMICONDUCTORS			
743	IC1,2	5652-IR2406G	Integrated Circuit, IR2406G Power Level Display Driver
741	IC3	5652-TA7318P	Integrated Circuit, TA7318P Linear-Log Converter
742	IC4	5652-μPC4558C	Integrated Circuit, μPC4558C Buffer Amp.
772	Q1	5614-414(R)	Transistor, 2SD414(R) Voltage Regulator
744	Q2	5613-1419(C)	Transistor, 2SC1419(C) Voltage Regulator
683	Q3,4,5	5613-2320(F)	Transistor, 2SC2320(F) Overload Protector/ Muting

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SER. NO.	REF. NO.	PART NO.	DESCRIPTION
690	D11	5632-1SR35-10	Diode, 1SR35-10
689	D12,55	5636-1S2473	Diode, 1S2473
692	D15	5635-RD5R1EB	Zener Diode, RD5R1EB 5.1V±0.3V
777	D16	5635-RD24EC	Zener Diode, RD24EC 25.8V±1.8V
747	D51,52	5635-RD15EC	Zener Diode, RD15EC 15.6V±0.9V
748	D53	5635-RD12EC	Zener Diode, RD12EC 12.7V+0.8V -0.7V

MISCELLANEOUS

769	P3,4	4443-157114	Connector, 15-Pin Male
767		4214-7008	Terminal for Lead Wire (x18)
141		2132-5049	Spacer, Resistors and Q1 (x9)
750		4551-7486	P.C. Board

R CH MAIN AMP P.C. BOARD

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All resistors 1/4W, ±5% Carbon unless otherwise noted)			
644	R401,403, 503	5134-102J25P	1 k ohm
648	R405	5134-333J25P	33 k ohm
649	R407,409	5134-473J25P	47 k ohm
647	R411,413	5134-622J25P	6.2 k ohm
646	R415,417	5134-472J25P	4.7 k ohm
645	R419,421, 431,437	5134-222J25P	2.2 k ohm
651	R423,425, 427,429	5174-201381	200 ohm (±1% 1/4W Metal)
641	R439,441	5102-1024713	1 k ohm (±2% 1/4W Fuse)
640	R443	5102-181579	180 ohm (±5% 1/4W Fuse)
663	R445	5102-151579	150 ohm (±5% 1/4W Fuse)
655	R447,449	5174-153381	15 k ohm (±1% 1/4W Metal)
639	R453,455	5102-101579	100 ohm (±5% 1/4W Fuse)
643	R457,459	5134-220J25P	22 ohm
654	R461,517	5174-822381	8.2 k ohm (±1% 1/4W Metal)
638	R463,465	5102-6R85711	6.8 ohm (±5% 1W Fuse)
653	R501	5174-471381	470 ohm (±1% 1/4W Metal)
652	R515	5174-561381	560 ohm (±1% 1/4W Metal)
618	VR401	5101-2238575	Variable Resistor, 22 k ohm
617	VR403	5101-2227275	Variable Resistor, 2.2 k ohm
CAPACITORS			
633	C401	5342-107B023	100MF ±20% 10V Electrolytic
628	C403	5354-104K1HM	0.1MF ±10% 50V Mylar
627	C405	5355-331J1HS	330PF ±5% 50V Stylor
634	C407,409	5345-106-25	10MF +50%-10% 25V Electrolytic
630	C415	5354-473K1HM	0.047MF ±10% 50V Mylar
631	C417	5355-221J1HS	220PF ±5% 50V Stylor
626	C419	5355-121J1HS	120PF ±5% 50V Stylor
SEMICONDUCTORS			
591	Q401/403	5611-μPA75V(F)	Dual Transistor, μPA75V(F) } Differential Amp.
592	Q405/407	5613-μPA74V(F)	Dual Transistor, μPA74V(F) } Differential Amp.
594	Q409	5613-1845(F)	Transistor, 2SC1845(F) } Pre-Driver
593	Q411	5611-992(F)	Transistor, 2SA992(F) } Pre-Driver
596	Q413	5614-666A(C)	Transistor, 2SD666A(C) } Pre-Driver
595	Q415	5612-646A(C)	Transistor, 2SB646A(C) } Pre-Driver

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SER. NO.	REF. NO.	PART NO.	DESCRIPTION
609	Q417	5612-548(Q)	Transistor, 2SB548(Q) Bias Stabilization
597	Q419	5612-647A(C)	Transistor, 2SB647A(C) }
598	Q421	5614-667A(C)	Transistor, 2SD667A(C) } Driver
601	Q423	5613-2591(Q)	Transistor, 2SC2591(Q) }
599	Q425	5611-1111(Q)	Transistor, 2SA1111(Q) }
612	D401,403	5635-RD20EB	Zener Diode, RD20EB 20V±1.2V
615	D417	5641-MV11Y	Varistor, MV11Y

MISCELLANEOUS

619	P401	4443-047114	Connector, 4-Pin Male
620	P402	4443-07418	Connector, 7-Pin Male
142		2132-5049	Spacer, Resistors (x12)
616		4551-7487	P.C. Board

L CH MAIN AMP P.C. BOARD

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All resistors 1/4W, ±5% Carbon unless otherwise noted)			
554	R402,404, 504	5134-102J25P	1 k ohm
558	R406	5134-333J25P	33 k ohm
559	R408,410	5134-473J25P	47 k ohm
557	R412,414	5134-622J25P	6.2 k ohm
556	R416,418	5134-472J25P	4.7 k ohm
555	R420,422, 432,438	5134-222J25P	2.2 k ohm
561	R424,426, 428,430	5174-201381	200 ohm (±1% 1/4W Metal)
551	R440,442	5102-1024713	1 k ohm (±2% 1/4W Fuse)
550	R444	5102-181579	180 ohm (±5% 1/4W Fuse)
573	R446	5102-151579	150 ohm (±5% 1/4W Fuse)
565	R448,450	5174-153381	15 k ohm (±1% 1/4W Metal)
549	R454,456	5102-101579	100 ohm (±5% 1/4W Fuse)
553	R458,460	5134-220J25P	22 ohm
564	R462,518	5174-822381	8.2 k ohm (±1% 1/4W Metal)
548	R464,466	5102-6R85711	6.8 ohm (±5% 1W Fuse)
563	R502	5174-471381	470 ohm (±1% 1/4W Metal)
562	R516	5174-561381	560 ohm (±1% 1/4W Metal)
528	VR402	5101-2238575	Variable Resistor, 22 k ohm
527	VR404	5101-2227275	Variable Resistor, 2.2 k ohm
CAPACITORS			
543	C402	5342-107B023	100MF ±20% 10V Electrolytic
539	C404	5354-104K1HM	0.1MF ±10% 50V Mylar
537	C406	5355-331J1HS	330PF ±5% 50V Stylor
544	C408,410	5345-106-25	10MF +50%-10% 25V Electrolytic
540	C416	5354-473K1HM	0.047MF ±10% 50V Mylar
541	C418	5355-221J1HS	220PF ±5% 50V Stylor
536	C420	5355-121J1HS	120PF ±5% 50V Stylor
SEMICONDUCTORS			
501	Q402/404	5611-μPA75V(F)	Dual Transistor, μPA75V(F) } Differential Amp.
502	Q406/408	5613-μPA74V(F)	Dual Transistor, μPA74V(F) } Differential Amp.
504	Q410	5613-1845(F)	Transistor, 2SC1845(F) } Pre-Driver
503	Q412	5611-992(F)	Transistor, 2SA992(F) } Pre-Driver
506	Q414	5614-666A(C)	Transistor, 2SD666A(C) } Pre-Driver
505	Q416	5612-646A(C)	Transistor, 2SB646A(C) } Pre-Driver

- to be continued -

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
519	Q418	5612-548(Q)	Transistor, 2SB548(Q) Bias Stabilization
507	Q420	5612-647A(C)	Transistor, 2SB647A(C) } Driver
508	Q422	5614-667A(C)	Transistor, 2SD667A(C) } Driver
511	Q424	5613-2591(Q)	Transistor, 2SC2591(Q) } Driver
509	Q426	5611-1111(Q)	Transistor, 2SA1111(Q) } Driver
522	D402,404	5635-RD20EB	Zener Diode, RD20EB 20V±1.2V
525	D418	5641-MV11Y	Varistor, MV11Y

MISCELLANEOUS

529	P402	4443-047114	Connector, 4-Pin Male
530	P404	4443-07418	Connector, 7-Pin Male
143		2132-5049	Spacer, Resistors (x12)
526		4551-7488	P.C. Board

R CH POWER SUPPLY P.C. BOARD

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All resistors 1/4W, ±5% Carbon unless otherwise noted)			
623	R467/471, 469/473	5275-R33671	0.33 ohm (±5% 5W Special Dual)
706	R475,477	5134-332J25P	3.3 k ohm
717	R479,481	5134-473J25P	47 k ohm
709	R485,489	5134-103J25P	10 k ohm
713	R487	5134-104J25P	100 k ohm
703	R491	5102-1024713	1 k ohm (±2% 1/4W Fuse)
642	R495	5134-6R8J25P	6.8 ohm
650	R497	5134-100J25P	10 ohm
637	R505	5102-5605710	56 ohm (±5% 1/2W Fuse)
624	R507	5275-100681	10 ohm (±10% 5W Cement)
CAPACITORS			
779	C3,5	5362-103048	0.01MF +100%-0% 500V Ceramic
782	C7,9,11, 13	5341-478F0266	4700MF ±20% 50V Electrolytic
788	C15,17	5341-228G0269	2200MF ±20% 63V Electrolytic
629	C421	5354-104K1HM	0.1MF ±10% 50V Mylar
635	C423	5352-1051953	1MF ±10% 100V Metalized Polyester
722	C425	5361-103ZF	0.01MF +80%-20% 50V Ceramic
636	C427,429	5352-1041953	0.1MF ±10% 100V Metalized Polyester
SEMICONDUCTORS			
603	Q427,429	5612-705(R)	Transistor, 2SB705(R) } Power Output
606	Q431,433	5614-745(R)	Transistor, 2SD745(R) } Power Output
684	Q435	5613-1775(F)	Transistor, 2SC1775(F) Overload Detector
682	Q437	5611-999(F)	Transistor, 2SA999(F) Overload Detector
776	D1	5685-S5VB20	Bridge Silicon Diode, S5VB20
774	D3	5685-S1VB20	Bridge Silicon Diode, S1VB20
613	D405,407	5636-1SS81	Diode, 1SS81
687	D409,411	5636-1S2473	Diode, 1S2473
795	D413,415, 419,421	5632-ERB12-02	Diode, ERB12-02
COILS			
658	L403	5995-R330333	Coil, Oscillation Preventer
659	L405	5995-R470333	Coil, Oscillation Preventer

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SER. NO.	REF. NO.	PART NO.	DESCRIPTION
MISCELLANEOUS			
792	J403	4443-077149	Connector, 7-Pin Female
188		2240-7133	Holder, Connector (J403)
799		4219-39	Terminal for Lead Wire (x12)
146		2132-7049	Spacer, R507 (x2)
144		2132-5049	Spacer, Special Dual Resistors and D1 (x10)
784		4551-7489	P.C. Board

L CH POWER SUPPLY P.C. BOARD

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
RESISTORS	(All resistors 1/4W, ±5% Carbon unless otherwise noted)		
533	R468/472, 470/474	5275-R33671	0.33 ohm (±5% 5W Special Dual)
705	R476,478	5134-332J25P	3.3 k ohm
716	R480,482	5134-473J25P	47 k ohm
708	R486,490,	5134-103J25P	10 k ohm
714	R488	5134-104J25P	100 k ohm
702	R492	5102-1024713	1 k ohm (±2% 1/4W Fuse)
552	R496	5134-6R8J25P	6.8 ohm
560	R498	5134-100J25P	10 ohm
547	R506	5102-5605710	56 ohm (±5% 1/2W Fuse)
534	R508	5275-100681	10 ohm (±10% 5W Cement)
CAPACITORS			
778	C4,6	5362-103048	0.01MF +100%-0% 500V Ceramic
781	C8,10,12, 14	5341-478F0266	4700MF ±20% 50V Electrolytic
787	C16,18	5341-228G0269	2200MF ±20% 63V Electrolytic
538	C422	5354-104K1HM	0.1MF ±10% 50V Mylar
545	C424	5352-1051953	1MF ±10% 100V Polyester
721	C426	5361-103ZF	0.01MF +80%-20% 50V Ceramic
546	C428,430	5352-1041953	0.1MF ±10% 100V Polyester
SEMICONDUCTORS			
513	Q428,430	5612-705(R)	Transistor, 2SB705(R) } Power Output
516	Q432,434	5614-745(R)	Transistor, 2SD745(R) } Power Output
685	Q436	5613-1775(F)	Transistor, 2SC1775(F) Overload Detector
681	Q438	5611-999(F)	Transistor, 2SA999(F) Overload Detector
775	D2	5685-S5VB20	Bridge Silicon Diode, S5VB20
773	D4	5685-S1VB20	Bridge Silicon Diode, S1VB20
523	D406,408	5636-1SS81	Diode, 1SS81
688	D410,412	5636-1S2473	Diode, 1S2473
794	D414,416 420,422	5632-ERB12-02	Diode, ERB12-02
COILS			
568	L404	5995-R330333	Coil, Oscillation Preventer
569	L406	5995-R470333	Coil, Oscillation Preventer

- to be continued -

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
MISCELLANEOUS			
791	J404	4443-077149	Connector, 7-Pin Female
189		2240-7133	Holder, Connector (J404)
798		4219-39	Terminal for Lead Wire (x12)
147		2132-7049	Spacer, R508 (x2)
145		2132-5049	Spacer, Special Dual Resistors and D2 (x10)
783		4551-7490	P.C. Board

SPEAKER OUTPUT P.C. BOARD

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
693	RE1,2	4331-20247110	Relay, Overload Protection/Speaker Switch
815	TE1,2	4214-7027	Speaker Output Terminal
621	L401,402	5991-7125	Coil, RF Choke
691	D13,14	5632-1SR35-10	Diode, 1SR35-10
661	C431,432	5354-104K1HM	Capacitor, 0.1MF ±10% 50V Mylar
622	R511,512	5275-1R5681	Resistor, 1.5 ohm ±10% 5W Cement
625	R513,514	5275-100681	Resistor, 10 ohm ±10% 5W Cement
139		2132-7016	Spacer, Speaker Output Terminal (x4)
817		4551-7547	P.C. Board

PARTS LIST OF MULTI VOLTAGE UNIT

AS TO ALL OTHER PARTS EXCEPT THE FOLLOWING PARTS IN REF. NO., PLEASE REFER TO THE SERVICE MANUAL OF REGULAR VOLTAGE UNIT.

SER. NO.	REF. NO.	PART NO.	DESCRIPTION
PART NO. CHANGE			
121B	121	1424-03001	Cabinet Back
133B	133	2211-7203	Chassis, Front
771B	T1,2	5584-701288	Power Transformer
801B	SW1	4431-01017658	Push Switch, Power
809B	FU1,2	5732-20202	Fuse, 2A 250V Time Lag (AC Voltage 220V or 240V)
046B	FU1,2	5732-40212	Fuse, 4A 250V Time Lag (AC Voltage 100V or 120V)
810B	P1	4161-71119	AC Line Cord
828B	C1	5352-1030958	Capacitor, 0.01MF ±20% AC250V Metalized Polyester
527B	VR403,404	5101-2217175	Variable Resistor, 220 ohm
556B	R415,416, 417,418	5134-222J25P	Resistor, 2.2 k ohm ±5% 1/4W Carbon
050B	R461,462	5174-432381	Resistor, 4.3 k ohm ±1% 1/4W Metal
053B	R503,504	5134-221J25P	Resistor, 220 ohm ±5% 1/4W Carbon
ADDITIONAL USAGE			
169B	169	2240-7041	Holder, Lead Wire Settle
227B	227	2327-300629	Screw (+) (3 x 6mm) (x4)
242B	242	2347-300842	Screw (+) (3 x 8mm) (x2)
030B	030	2114-71119	Bushing, Lead Wire
031B	031	2219-7575	Bracket, Voltage Selector (SW7,8) (x2)
045B	SW7,8	4467-1	Power Source Voltage Selector
556B	R551,552, 553,554	5134-222J25P	Resistor, 2.2 k ohm ±5% 1/4W Carbon
049B	R559,560	5174-392381	Resistor, 3.9 k ohm ±1% 1/4W Metal
055B	R561,562, 563,564	5102-4714713	Resistor, 470 ohm ±2% 1/4W Fuse
054B	R565,566	5134-391J25P	Resistor, 390 ohm ±5% 1/4W Carbon

SCHEMATIC DIAGRAM NOTES

1. All resistors are 1/4 watt, unless noted otherwise.
   Values are in ohms. K = 1000 M = 1000K
2. All capacitances values are in MF unless noted otherwise. PF = MMF

VOLTAGE CHART

AC 120V, no signal, chassis ground.

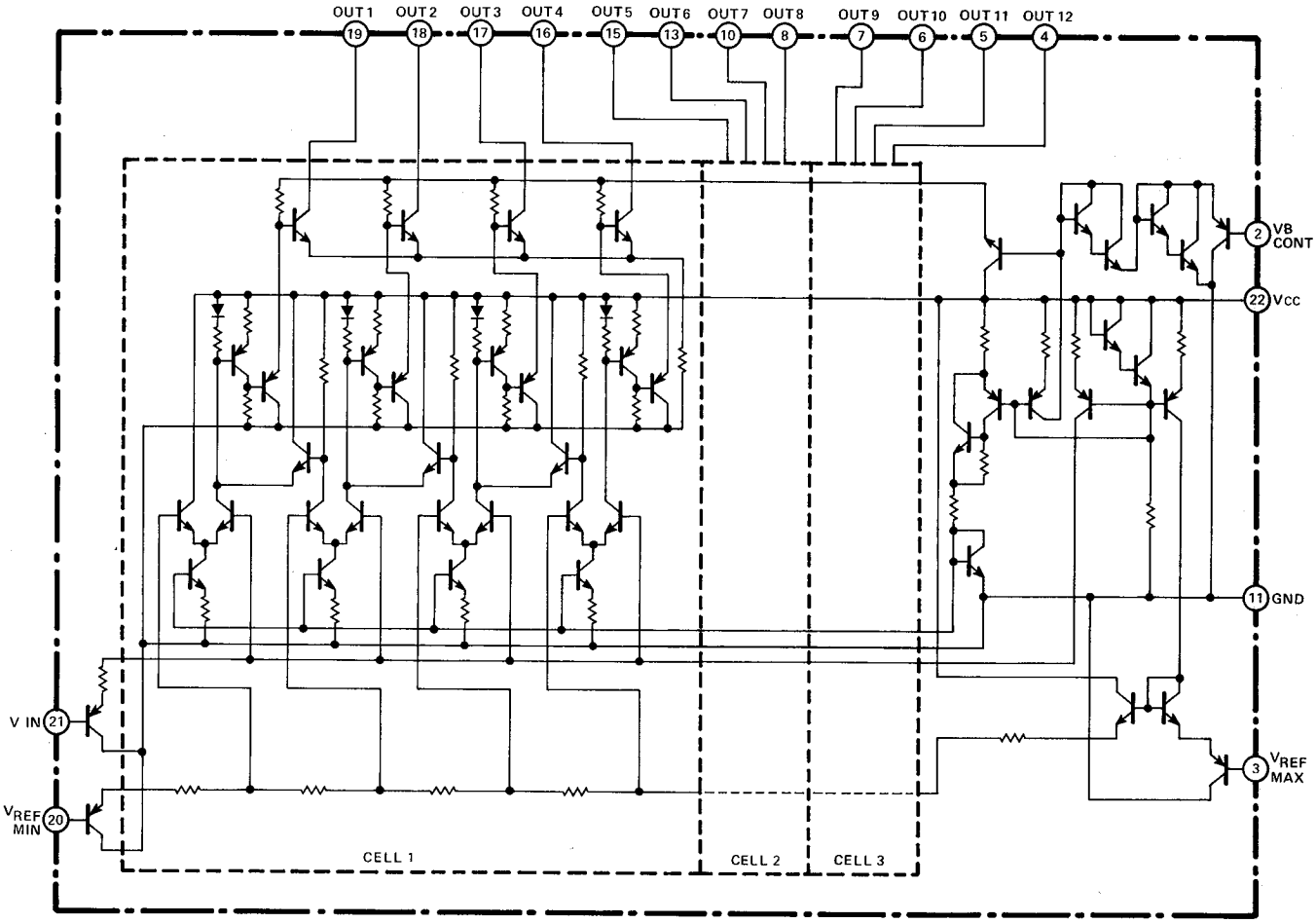
+B1	+50V	-B1	-50V
+B2	+40V	-B2	-40V
+B3	+50V	-B3	-50V
+B4	+40V	-B4	-40V

	BASE	EMITTER	COLLECTOR
Q1	+23.8V	+23.4V	+40V
Q2	+12.7V	+12.2V	+39V
Q3	0V	0V	+3.8V
Q4	+0.6V	0V	0V
Q5	0V	0V	+23.8V
Q6	0V	+0.1V	+47V
Q7	+0.1V	0V	+47V
Q401,402	0V	+0.5V	-43.8V
Q403,404	0V	+0.5V	-44V
Q405,406	0V	-0.5V	+43.8V
Q407,408	0V	-0.5V	+43.5V
Q409,410	-43.8V	-44.4V	0V
Q411,412	+43.8V	+44.4V	0V
Q413,414	-44.4V	-45V	-1V
Q415,416	+44.4V	+45V	+1.4V
Q417,418	+1.2V	+1.4V	-1V
Q419,420	-1V	-0.7V	-46.8V
Q421,422	+1.4V	+0.8V	+46.3V
Q423,424	-46.8V	-47.5V	-0.5V
Q425,426	+46.3V	+46.7V	+0.6V
Q427,428	-0.5V	0V	-40V
Q429,430	-0.5V	0V	-40V
Q431,432	+0.6V	0V	+40V
Q433,434	+0.6V	0V	+40V
Q435,436	0V	0V	+47V
Q437,438	+47V	+47.3V	0V

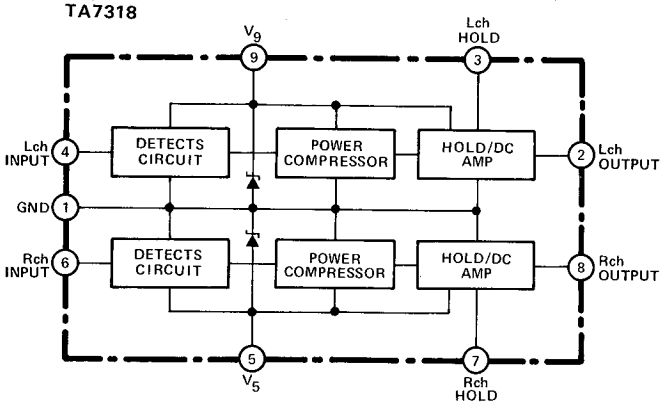
	IC1,2	IC3	IC4
1.	0V	+8.5V	0V
2.	+0.5V	0V	0V
3.	+6V	+1.7V	0V
4.	+5.5V	+8.4V	-16V
5.	+7V	0V	0V
6.	+8.6V	+8.4V	0V
7.	+10.2V	+1.7V	0V
8.	+5.5V	0V	+16V
9.	0V	+17V	
10.	+7V		
11.	0V		
12.	0V		
13.	+8.5V		
14.	0V		
15.	+10.2V		
16.	+5.5V		
17.	+7V		
18.	+8.6V		
19.	+10.2V		
20.	0V		
21.	0V		
22.	+12V		

IC BLOCK DIAGRAM

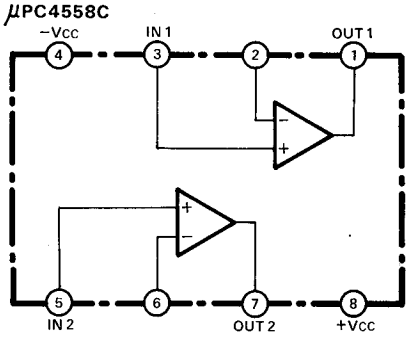
IC1,2
IR2406G



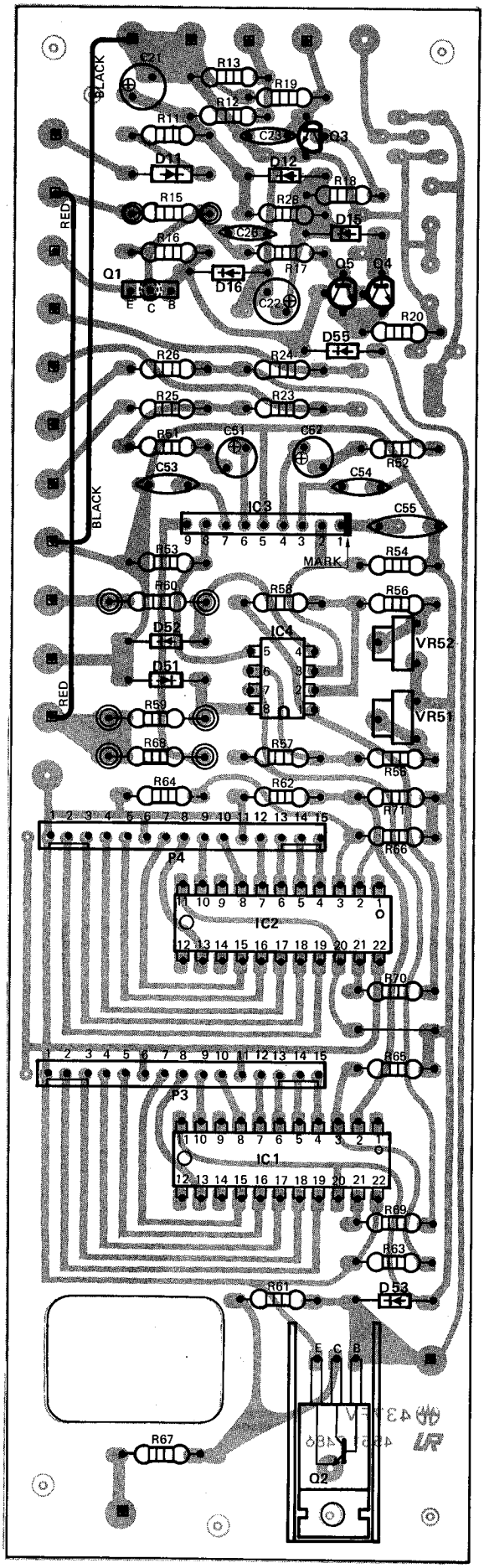
IC3
TA7318



IC4
μPC4558C

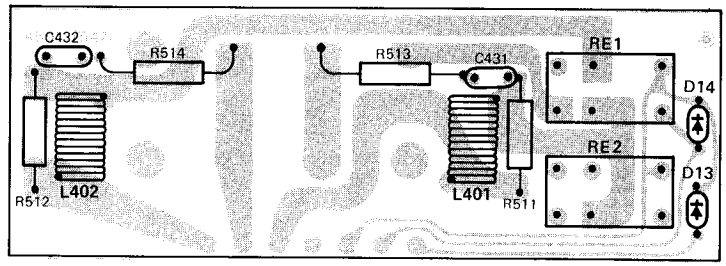


POWER LEVEL DISPLAY DRIVE P.C. BOARD

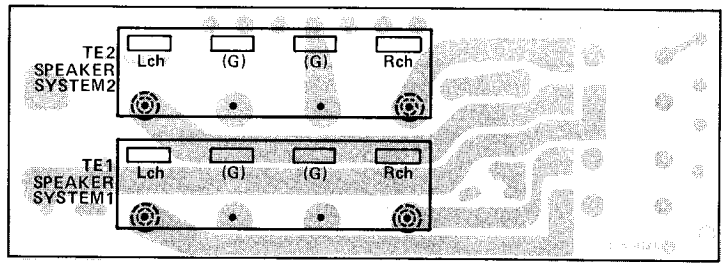


SPEAKER OUTPUT P.C. BOARD

A SIDE

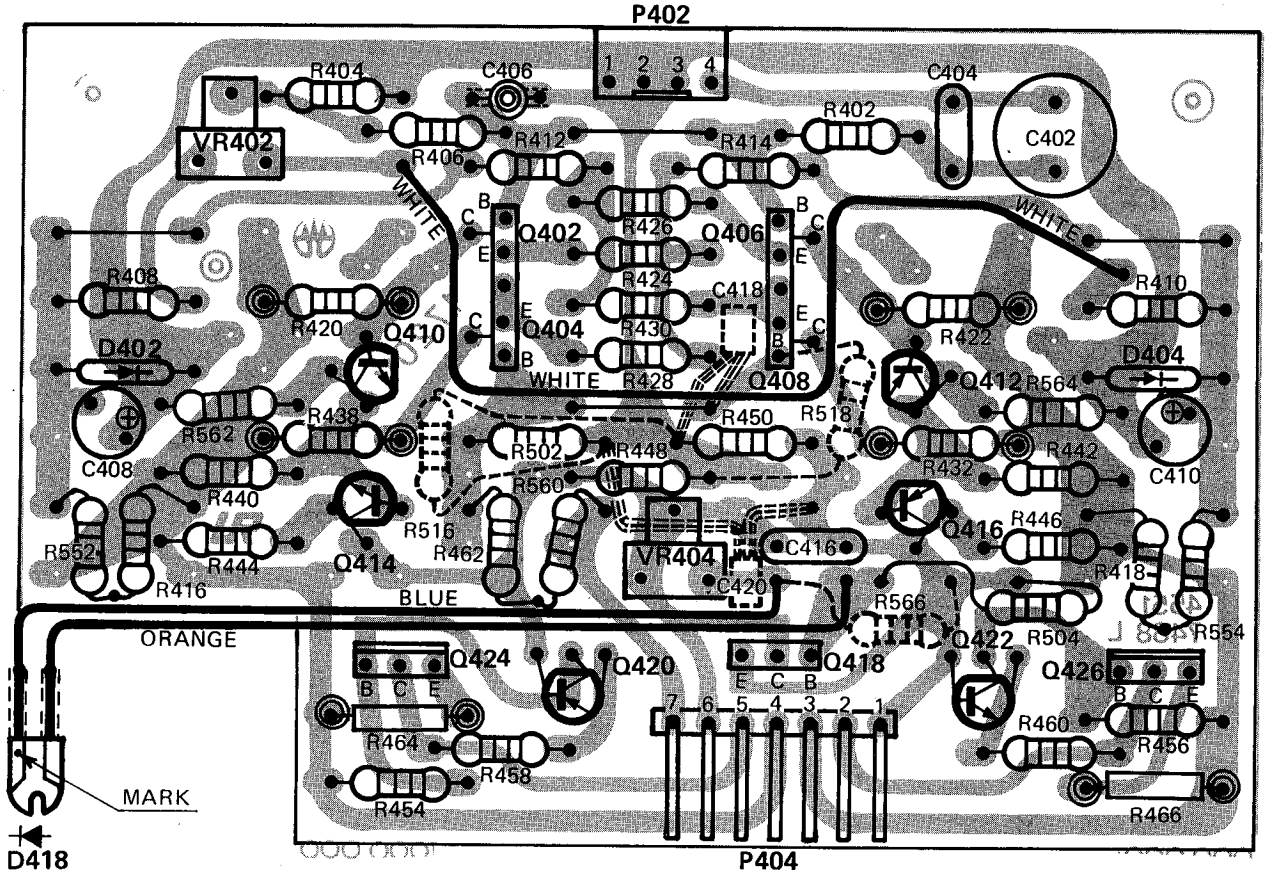


B SIDE

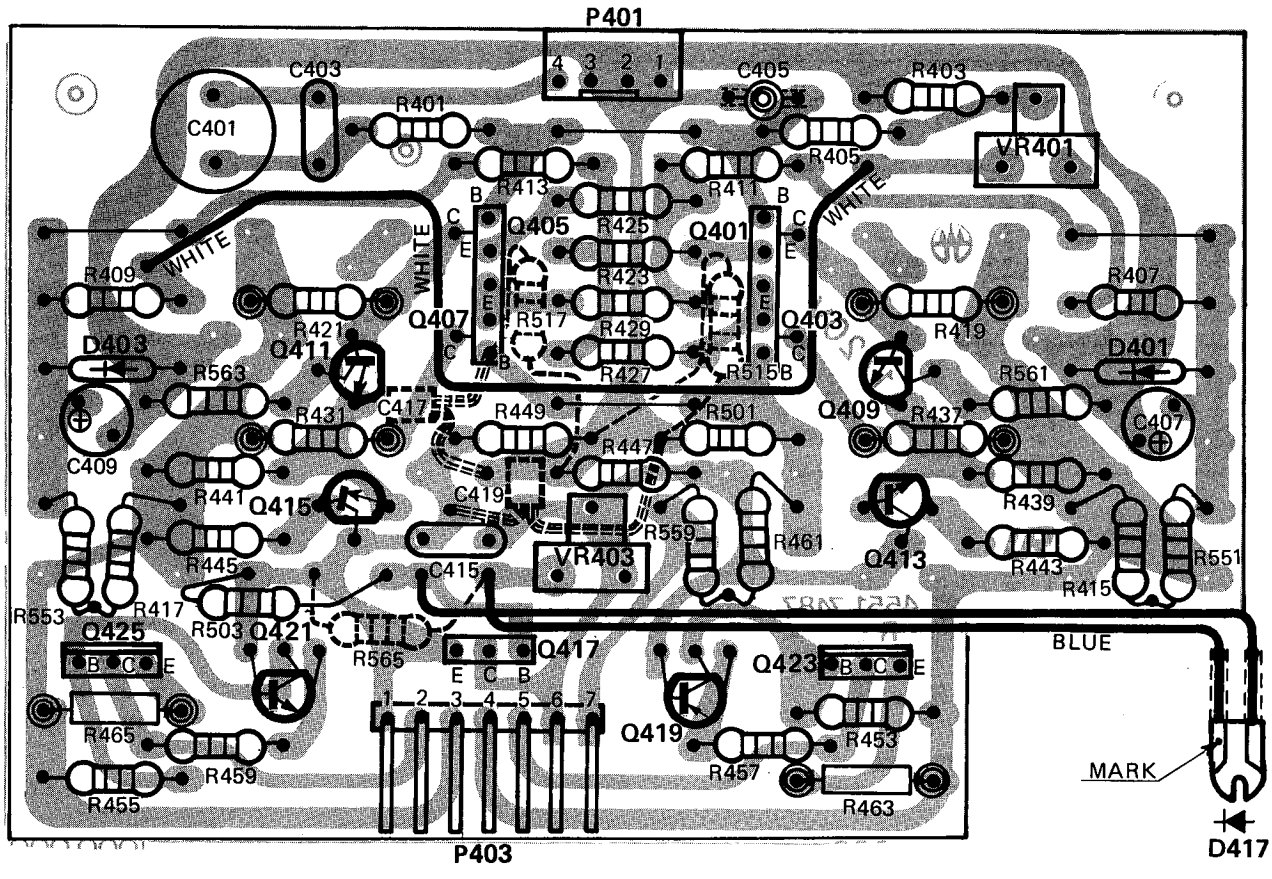


MAIN AMP P.C. BOARD - MULTI

LCH

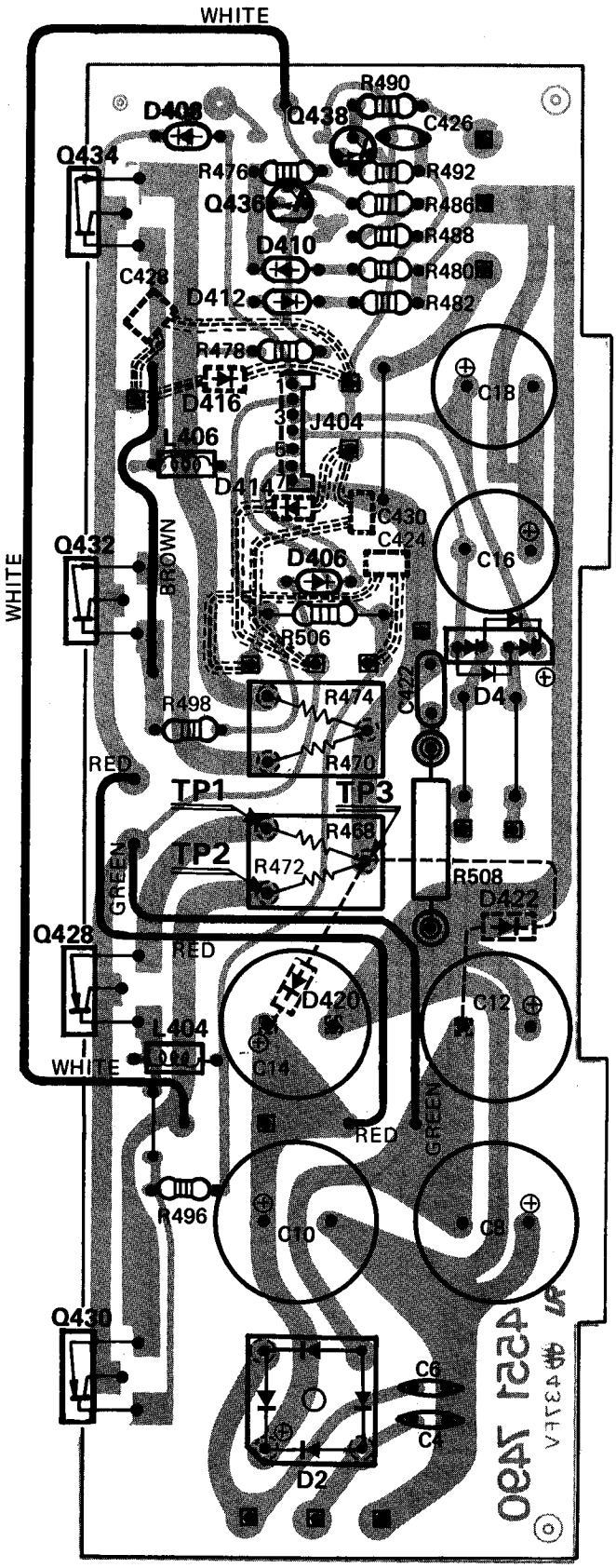


RCH

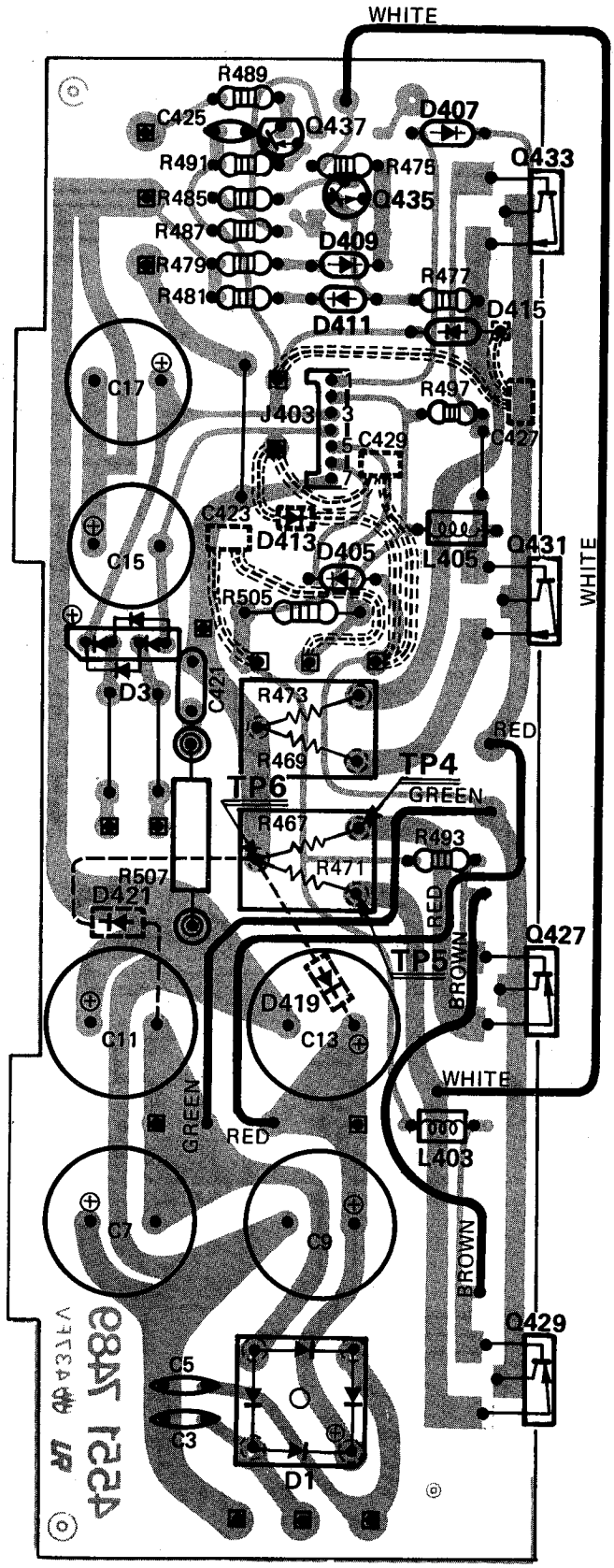


POWER SUPPLY P.C. BOARD

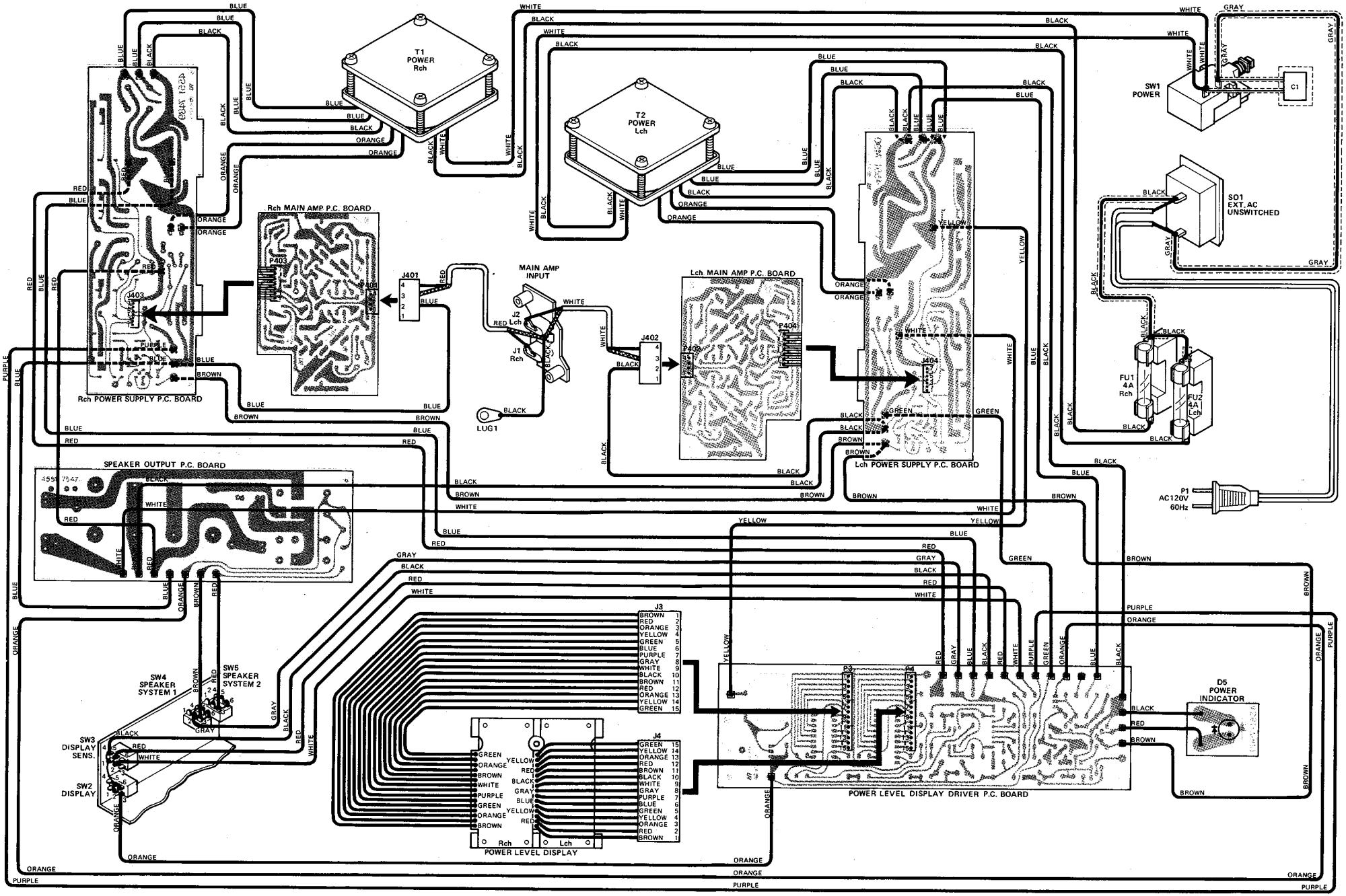
LCH



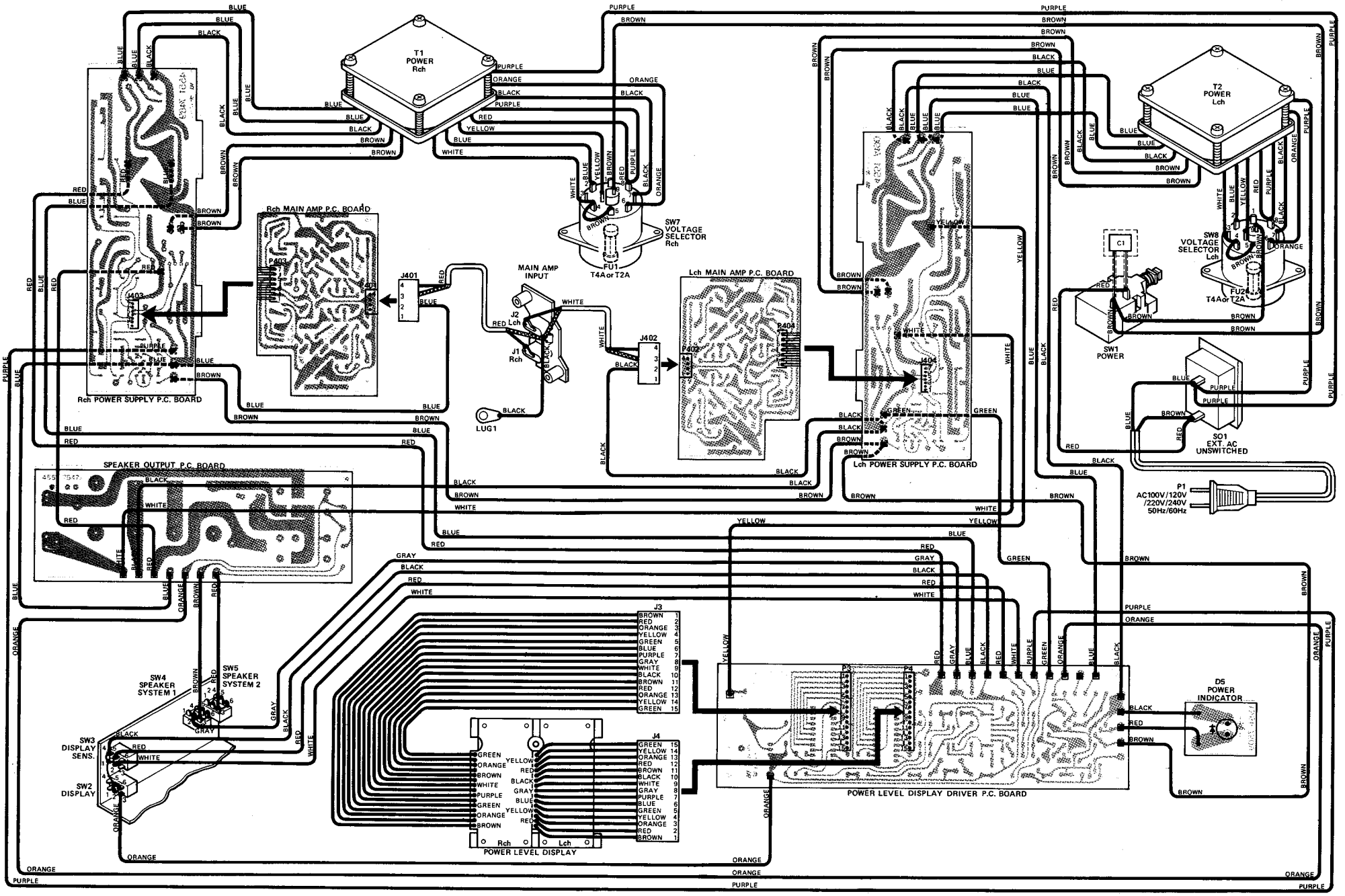
RCH



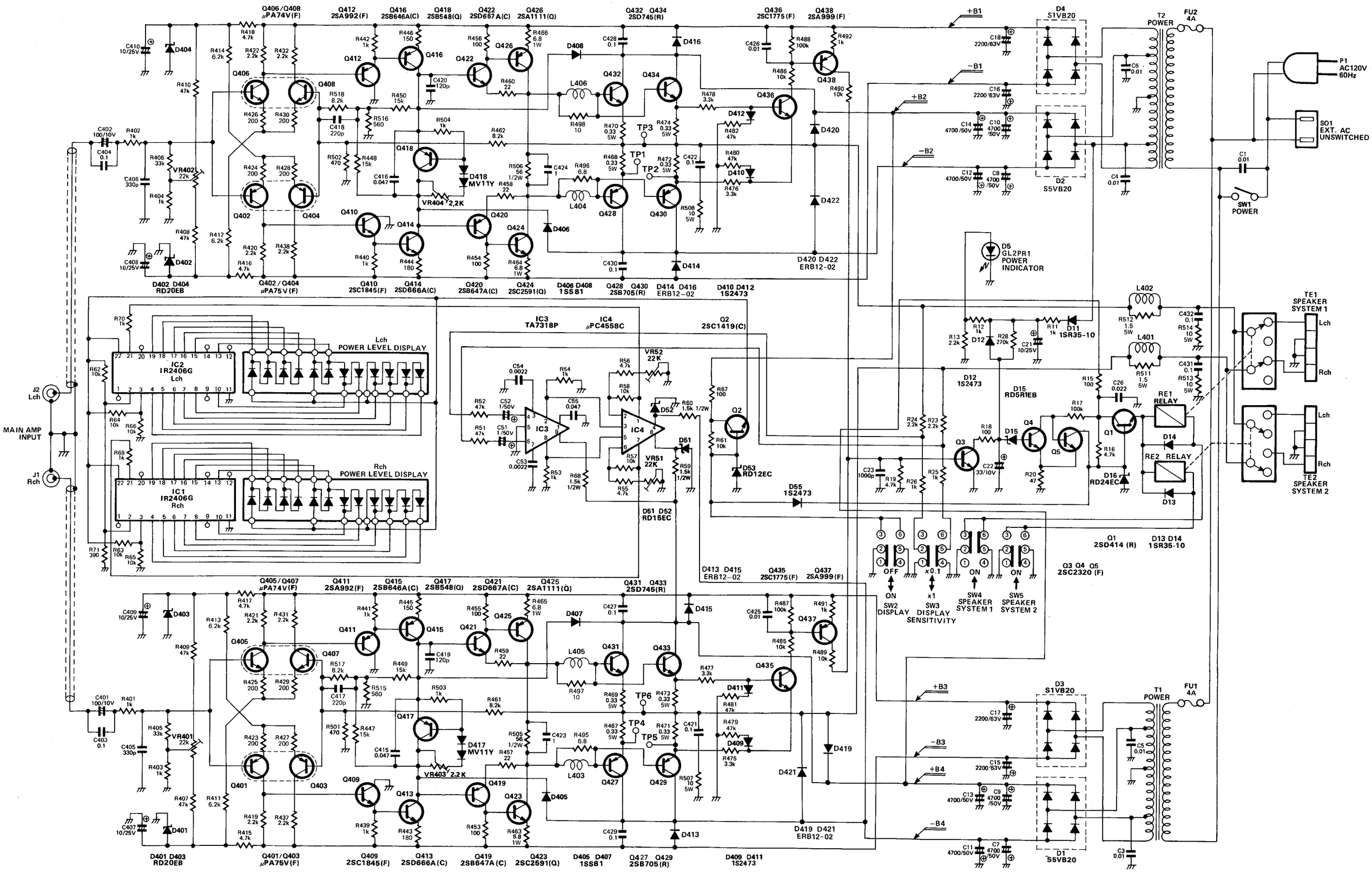
WIRING DIAGRAM — MODEL hk 770 — 120V ONLY



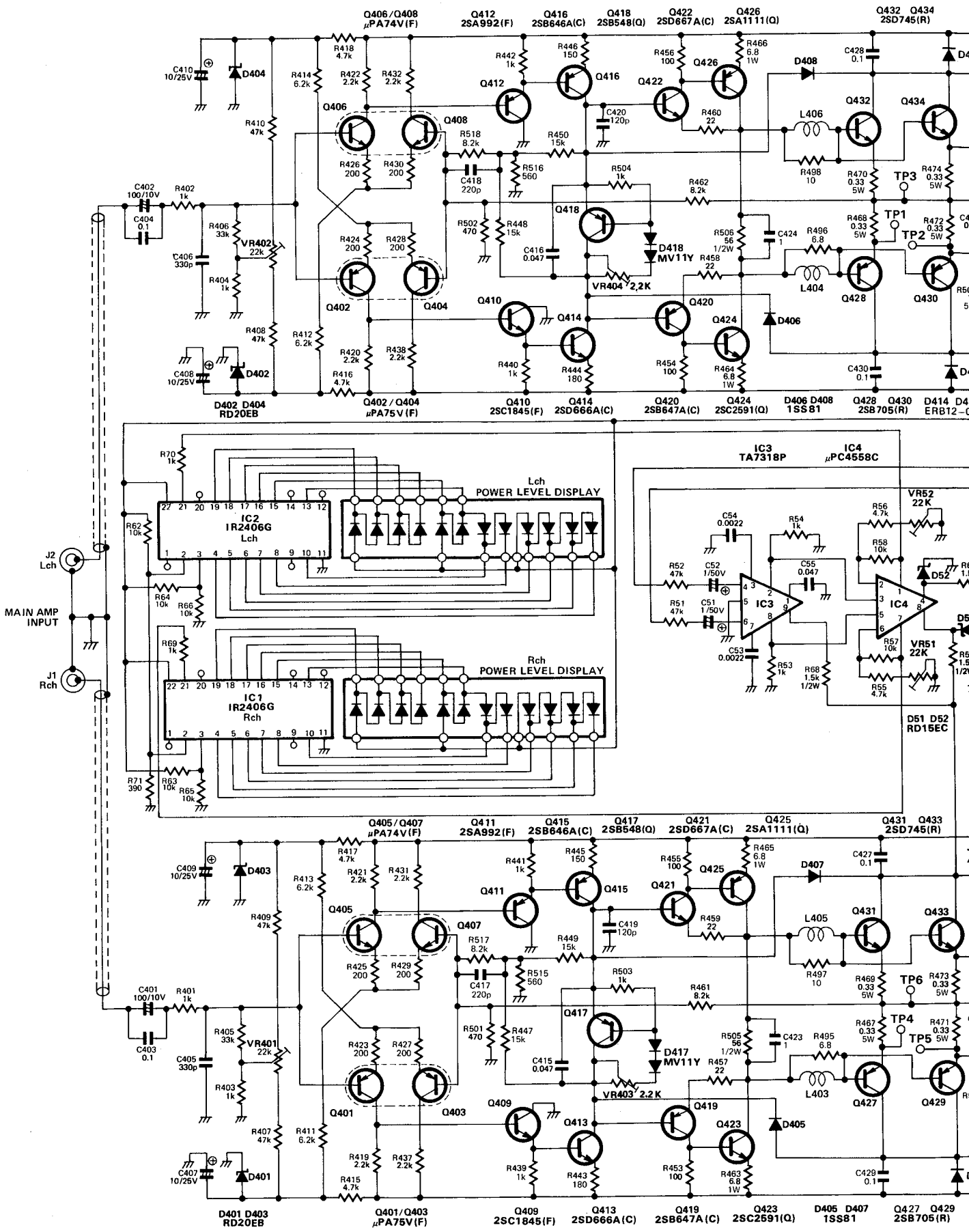
WIRING DIAGRAM — MODEL hk 770 — MULTI VOLTAGE

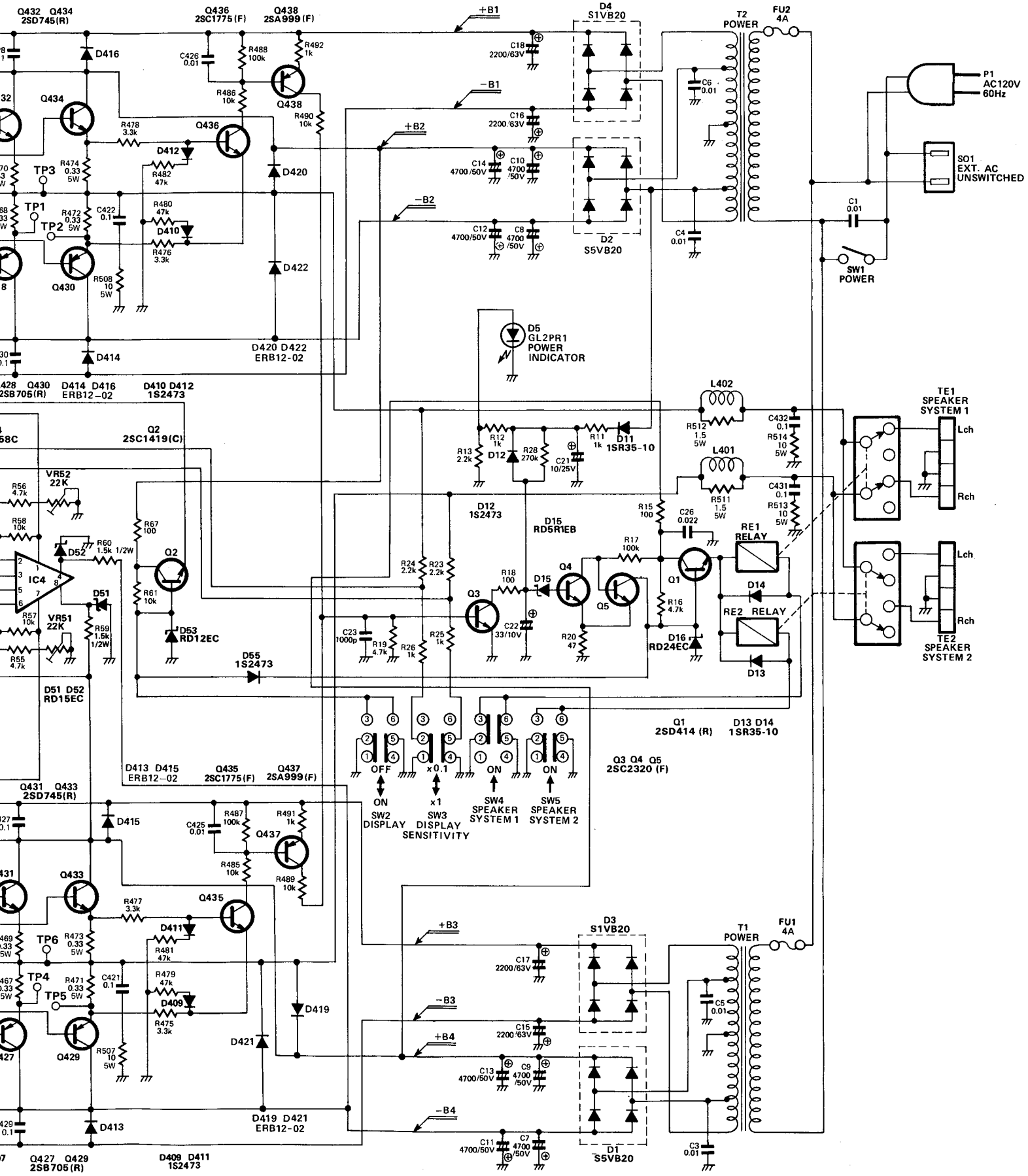


SCHEMATIC DIAGRAM — MODEL hk 770 — 120V ONLY

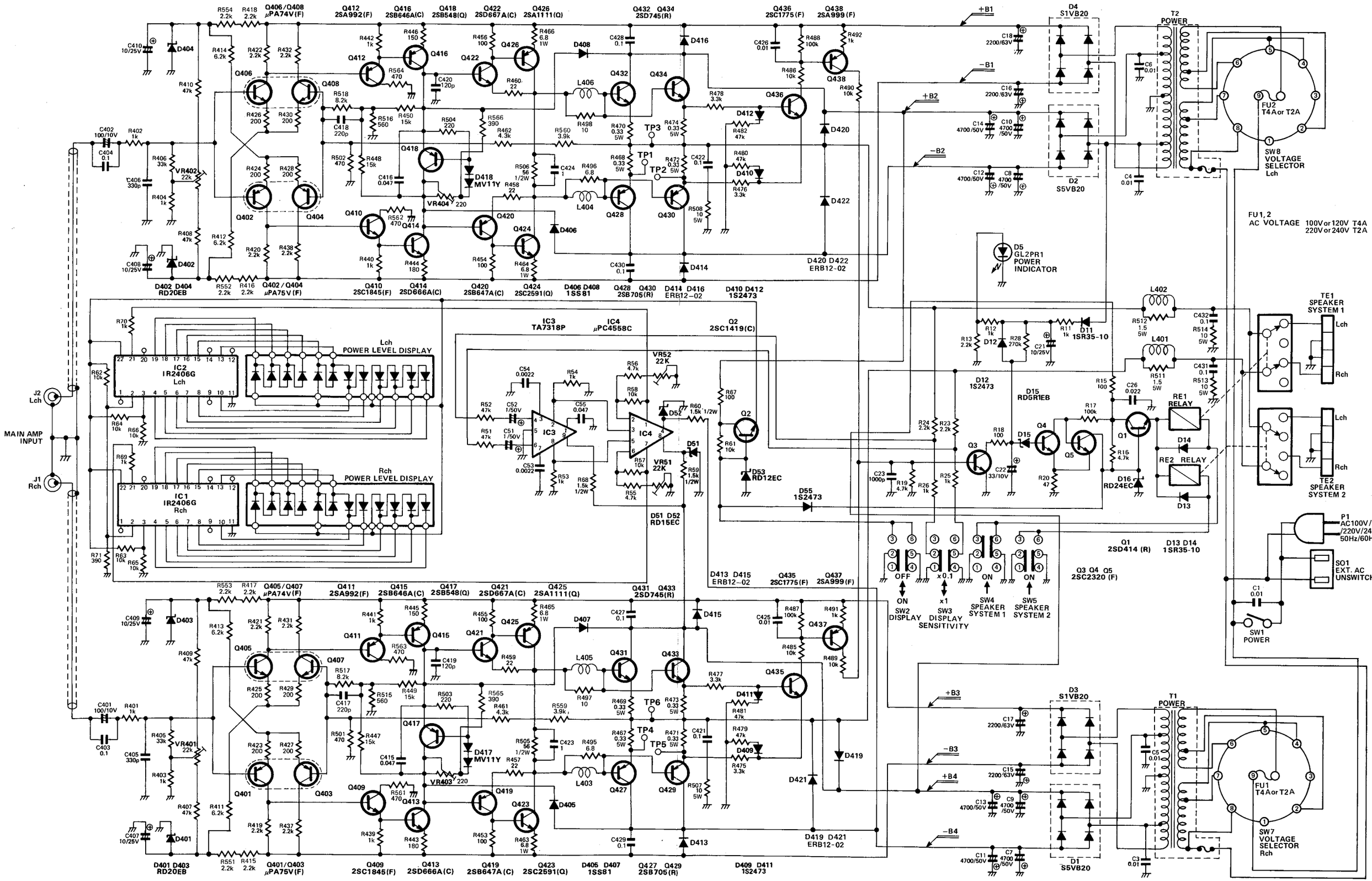


SCHEMATIC DIAGRAM — MODEL hk 770 — 120V ONLY

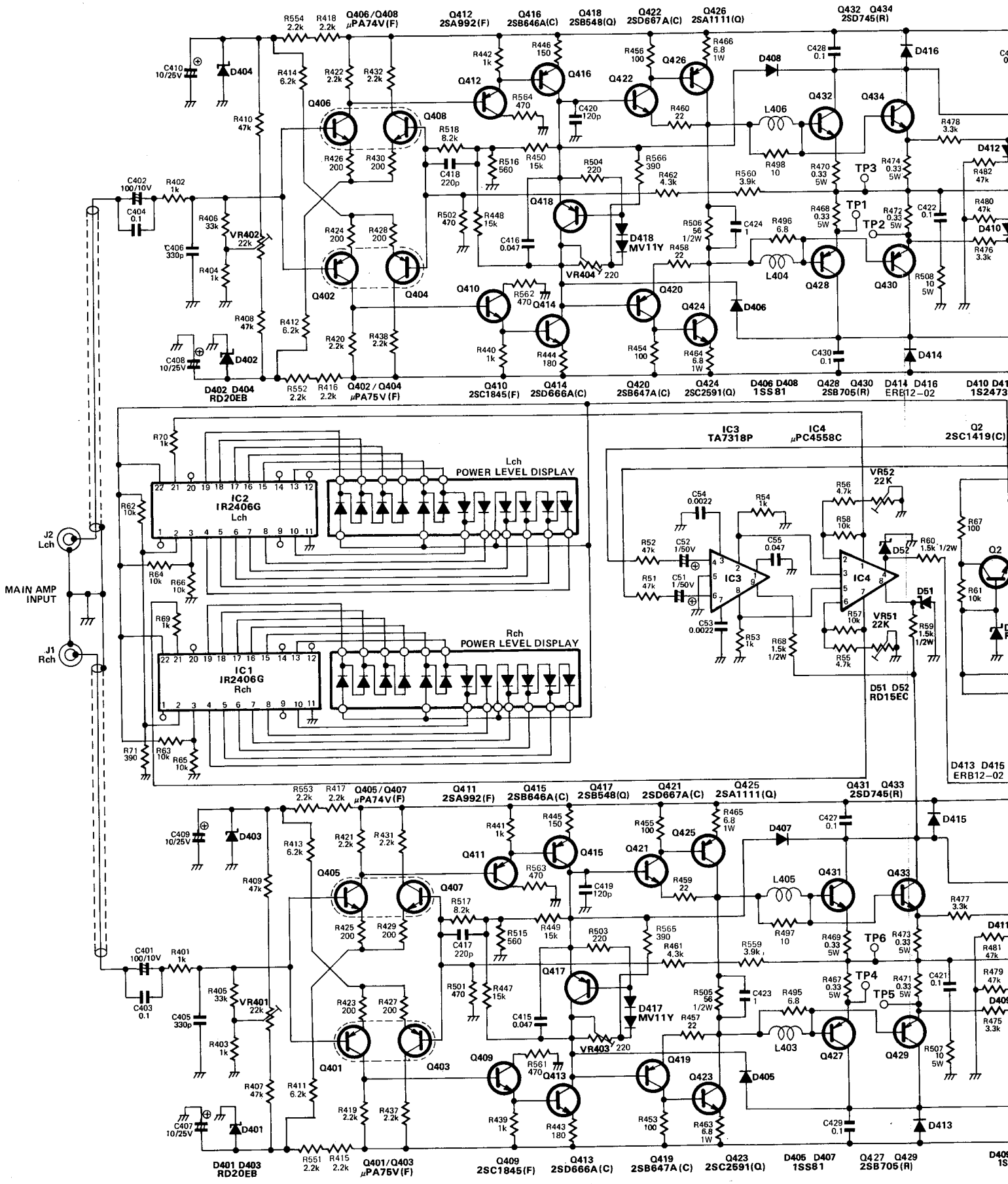


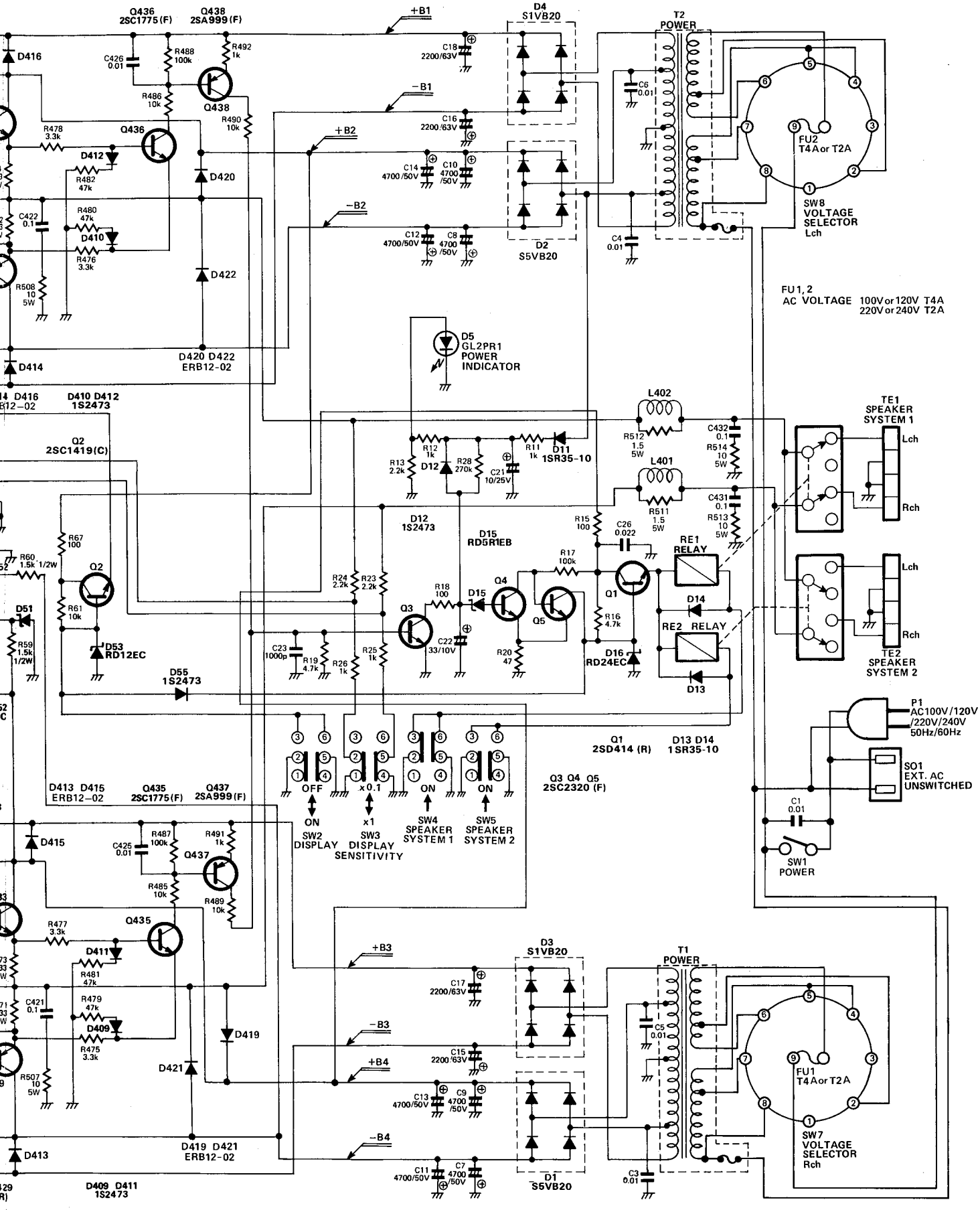

Q432 Q434
2SD745(R)
Q436
2SC1775(F)
Q438
2SA999(F)
+B1
D4
S1VB20
T2
POWER
FU2
4A
D416
C426
0.01
R488
100k
R492
1k
C18
2200/63V
P1
AC120V
60Hz
Q434
R486
10k
Q438
-B1
R490
10k
C16
2200/63V
SO1
EXT. AC
UNSWITCHED
R478
3.3k
Q436
+B2
D412
TP3
R474
0.33
5W
R482
47k
D420
C14
4700/50V
C10
4700
/50V
C6
0.01
TP1
TP2
R472
0.33
5W
C422
0.1
R480
47k
D410
R476
3.3k
-B2
C12
4700/50V
C8
4700
/50V
D2
S5VB20
C4
0.01
C1
0.01
SW1
POWER
Q430
R508
10
5W
D422
D5
GL2PR1
POWER
INDICATOR
D420 D422
ERB12-02
D414
Q428 Q430
2SB705(R)
D414 D416
ERB12-02
D410 D412
1S2473
L402
TE1
SPEAKER
SYSTEM 1
Q2
2SC1419(C)
R12
1k
R13
2.2k
D12
R28
270k
C21
10/25V
R11
1k
D11
1SR35-10
R512
1.5
5W
C432
0.1
R514
10
5W
Lch
L401
VR52
22K
R56
4.7k
D12
1S2473
D15
RD5R1EB
R15
100
C26
0.022
R511
1.5
5W
C431
0.1
R513
10
5W
Rch
R58
10k
R67
100
R17
100k
RE1
RELAY
D52
R60
1.5k 1/2W
Q2
R24
2.2k
R23
2.2k
R18
100
D15
Q4
Q1
IC4
D51
R61
10k
Q3
Q5
R16
4.7k
D14
R57
10k
VR51
22K
R59
1.5k
1/2W
D53
RD12EC
C23
1000p
R19
4.7k
R26
1k
R25
1k
C22
33/10V
R20
47
D16
RD24EC
RE2 RELAY
R55
4.7k
D55
1S2473
D13
TE2
SPEAKER
SYSTEM 2
D51 D52
RD15EC
Q1
2SD414 (R)
D13 D14
1SR35-10
Q3 Q4 Q5
2SC2320 (F)
OFF
ON
SW2
DISPLAY
x0.1
x1
SW3
DISPLAY
SENSITIVITY
ON
SW4
SPEAKER
SYSTEM 1
ON
SW5
SPEAKER
SYSTEM 2
D413 D415
ERB12-02
Q435
2SC1775(F)
Q437
2SA999(F)
Q431 Q433
2SD745(R)
D415
C425
0.01
R487
100k
R491
1k
Q437
R485
10k
R489
10k
Q433
R477
3.3k
Q435
+B3
T1
POWER
FU1
4A
D411
TP6
R473
0.33
5W
R481
47k
C17
2200/63V
TP4
TP5
R471
0.33
5W
C421
0.1
R479
47k
D409
R475
3.3k
D419
-B3
C5
0.01
C15
2200/63V
+B4
D421
Q429
R507
10
5W
C13
4700/50V
C9
4700
/50V
D413
D419 D421
ERB12-02
-B4
C11
4700/50V
C7
4700
/50V
D1
S5VB20
C3
0.01
Q427 Q429
2SB705(R)
D409 D411
1S2473

SCHEMATIC DIAGRAM — MODEL hk 770 — MULTI VOLTAGE



SCHEMATIC DIAGRAM — MODEL hk 770 — MULTI VOLTAGE




Q436 2SC1775(F)
Q438 2SA999(F)
+B1
D4 S1VB20
T2 POWER
D416
C426 0.01
R488 100k
R492 1k
C18 2200/63V
R486 10k
Q438
-B1
R490 10k
C16 2200/63V
R478 3.3k
Q436
+B2
D412
R482 47k
D420
C14 4700/50V
C10 4700/50V
C6 0.01
FU2 T4A or T2A
SW8 VOLTAGE SELECTOR Lch
C422 0.1
R480 47k
D410
R476 3.3k
-B2
C12 4700/50V
C8 4700/50V
D2 S5VB20
C4 0.01
R508 10 5W
D422
FU1,2 AC VOLTAGE 100V or 120V T4A 220V or 240V T2A
D5 GL2PR1 POWER INDICATOR
D414
D420 D422 ERB12-02
D416 ERB12-02
D410 D412 1S2473
L402
TE1 SPEAKER SYSTEM 1
Q2 2SC1419(C)
R12 1k
R11 1k
D11 1SR35-10
R512 1.5 5W
C432 0.1
R514 10 5W
Lch
Rch
R13 2.2k
D12
R28 270k
C21 10/25V
L401
R511 1.5 5W
C431 0.1
R513 10 5W
D12 1S2473
D15 RD5R1EB
R15 100
C26 0.022
RE1 RELAY
R67 100
R60 1.5k 1/2W
R17 100k
Q2
R24 2.2k
R23 2.2k
R18 100
D15
Q4
Q1
D14
R61 10k
Q3
Q5
R16 4.7k
RE2 RELAY
D51
C22 33/10V
D16 RD24EC
TE2 SPEAKER SYSTEM 2
R59 1.5k 1/2W
D53 RD12EC
C23 1000p
R19 4.7k
R26 1k
R25 1k
R20 47
D13
D55 1S2473
P1 AC100V/120V /220V/240V 50Hz/60Hz
SO1 EXT. AC UNSWITCHED
Q1 2SD414 (R)
D13 D14 1SR35-10
Q3 Q4 Q5 2SC2320 (F)
C1 0.01
SW1 POWER
OFF
ON
SW2 DISPLAY
x0.1
x1
SW3 DISPLAY SENSITIVITY
ON
SW4 SPEAKER SYSTEM 1
ON
SW5 SPEAKER SYSTEM 2
D413 D415 ERB12-02
Q435 2SC1775(F)
Q437 2SA999(F)
D415
C425 0.01
R487 100k
R491 1k
Q437
R485 10k
R489 10k
Q435
R477 3.3k
D411
R481 47k
C421 0.1
R479 47k
D409
R475 3.3k
D419
D421
R507 10 5W
+B3
D3 S1VB20
T1 POWER
C17 2200/63V
C5 0.01
-B3
C15 2200/63V
+B4
C13 4700/50V
C9 4700/50V
FU1 T4A or T2A
SW7 VOLTAGE SELECTOR Rch
-B4
C11 4700/50V
C7 4700/50V
D1 S5VB20
C3 0.01
D413
D419 D421 ERB12-02
D409 D411 1S2473

PARTS ORDERS WITHIN USA

To speed handling of your order be sure to include both the model and serial numbers, in addition to the quantity, part number and part description of the items ordered. Orders from independent dealers, independent servicemen, and retail customers will be shipped on a cash in advance basis. Harman Kardon reserves the right to substitute equivalent parts for those originally installed in this chassis. All parts should be ordered from Harman Kardon, Inc., 240 Crossways Park West, Woodbury, New York 11797, Att: Parts Department.

PARTS ORDERS OUTSIDE USA

To speed handling of your order be sure to include both the model and serial numbers, in addition to the quantity, part number and part description of the items ordered. Orders from independent dealers, independent servicemen, and retail customers will be shipped on a cash in advance basis. Harman Kardon reserves the right to substitute equivalent parts for those originally installed in this chassis. All parts should be ordered through your local distributor.

harman/kardon 240 CROSSWAYS PARK WEST, WOODBURY, N.Y. 11797 PRINTED IN USA
10/80